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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,006	11/03/2003	Donald W. Verser	210331US (CPCM:0019/FLE)	3672

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EXAMINER	
DOROSHENK, ALEXA A	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/700,006	VERSER ET AL.
	Examiner	Art Unit
	Alexa A. Doroshenk	1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-43 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-43 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 15 March 2004 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/15/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The status of the related applications (and the application numbers) should be updated in the first paragraph of the specification.

Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: In figure 1, numbers 39, 41 and 62; in figure 2, numbers 253, 255, 262 and 297; and in figure 3, number 358. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Page. 11, paragraph 0029, "flash gas line 20";

Page 12, paragraph 0034, "slurry polymerization system 10"; and

Page 21, paragraph 0055, "heater 296".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the transfer of a portion of liquid hydrocarbon from the fractionation zone to a catalyst preparation zone (claims 8, 28 and 40) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. Claims 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 20 recites the limitation "the first and second fractionation columns" in lines 1-2 of the claim. There is insufficient antecedent basis for this limitation in the claim and no fractionation columns have been recited.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims [redacted] are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreischer et al. (6,045,661) and Howard et al. (5,533,437).

With respect to claims 25 and 36, Kreischer et al. teaches withdrawing effluent containing solids (col. 3, lines 12-22) from a polymerization reactor (10) to a flash tank (reads on a intermediate pressure zone separator) (30). Vapors (46) from the flash tank (30) are condensed (58) and recycled, accumulated in a tank (96) and fluidly connected to the reaction zone (col. 5, lines 46-48). Solids (40) from the flash tank (30) are transferred to a purge zone (col. 4, lines 1-3).

Kreischer et al. fails to teach any further processing with regard to the purge zone.

Howard et al. also discloses a polymerization process and apparatus and teaches wherein it is valuable to recover separated hydrocarbons from a purge zone to

recycle to the polymerization reactor as well as recycle separated purge gas to be reused in the purge zone (col. 4, lines 52-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Howard et al. to recycle the streams from a purge zone in order to make use of those products as well as achieve an efficient system.

With respect to claim 26, Kreischer et al. teaches transferring vapor to be recycled to a fractionation zone (16).

With respect to claim 27, Kreischer et al. further teaches transferring substantially no liquid (vapor) from the recycle zone to the fractionation zone (col. 4, lines 12-13).

With respect to claim 29, Howard et al. does not teach that recovered purge gas is flared.

With respect to claims 31-33, Howard et al. discloses wherein the recovered purge stream is "high purity purge gas" (col. 4, lines 54-58).

With respect to claim 34, Howard et al. discloses wherein the purge stream is nitrogen and the hydrocarbon comprises diluent (col. 4, lines 43-52).

With respect to claim 35, Howard et al. discloses wherein the purge stream can comprise particles and therefor would act as a motive force (col. 4, lines 43-53).

With respect to claim 37, Kreischer et al. discloses a vapor delivery conduit (114, 116, 128) connected to a top of the recycle tank (96) and a fractionating column (94).

With respect to claim 38, Kreischer et al. discloses a liquid delivery conduit (120) attached to a bottom of the recycle tank (96) and connected the polymerization reactor (col. 5, lines 46-48).

With respect to claim 39, Kreischer et al. discloses a second fractionation col. (16) connected to a top portion of the first fractionation column (94).

With respect to claims 41 and 42, though Kreischer et al. discloses sidedraws with the fractionation columns and a fractionation column between the recycle tank and the reactor, to eliminate an element and its function is an obvious expedient since the remaining elements can perform the same functions as before. In re Karlson, 136 USPQ 184 (CCPA 1963).

With respect to claim 43, Howard et al. does not teach wherein the recovery unit is connected to a purge gas flare.

10. Claims [redacted] are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreischer et al. (6,045,661), Howard et al. (5,533,437) and Perry (3,869,807).

With respect to claims 1 and 15, Kreischer et al. teaches withdrawing effluent containing solids (col. 3, lines 12-22) from a polymerization reactor (10) to a flash tank (reads on a intermediate pressure zone separator) (30). Vapors (46) from the flash tank (30) are condensed (58) and recycled, accumulated in a tank (96) and fluidly connected to the reaction zone (col. 5, lines 46-48). Solids (40) from the flash tank (30) are transferred to a purge zone (col. 4, lines 1-3).

Kreischer et al. fails to teach any further processing with regard to the purge zone.

Howard et al. also discloses a polymerization process and apparatus and teaches wherein it is valuable to recover separated hydrocarbons from a purge zone to recycle to the polymerization reactor as well as recycle separated purge gas to be

reused in the purge zone (col. 4, lines 52-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Howard et al. to recycle the streams from a purge zone in order to make use of those products as well as achieve an efficient system.

Perry also discloses a transfer means for the solids of a polymerization process (col. 1, lines 10-17). The process of Perry also teaches a flash tank (7) followed by a purge zone (4) and further teaches an extruder in a sealed (col. 3, lines 5-15) connection to the purge zone (4) (see figure) so that both solids and gases would transfer to the extruder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further provide an extruder to the modified Kreischer et al. in order to make use of the products of the system.

With respect to claim 2, Howard et al.'s teaching of recycling the purge gas back to the purge zone (col. 4, lines 52-57) would read on passing the recovered stream to a closed loop transfer zone.

With respect to claim 4, though Kreischer et al. discloses a fractionation column between the recycle tank and the reactor, to eliminate an element and its function is an obvious expedient since the remaining elements can perform the same functions as before. In re Karlson, 136 USPQ 184 (CCPA 1963).

With respect to claims 5 and 17, Howard et al. teaches wherein recovered hydrocarbon is recycled to the reaction zone (col. 4, lines 52-57).

With respect to claim 6, Kreischer et al. teaches transferring vapor to be recycled to a fractionation zone (16).

With respect to claim 7, Kreischer et al. further teaches transferring substantially no liquid (vapor) from the recycle zone to the fractionation zone (col. 4, lines 12-13).

With respect to claim 29, Howard et al. does not teach that recovered purge gas is flared.

With respect to claims 9-13, Howard et al. discloses wherein the recovered purge stream is "high purity purge gas" (col. 4, lines 54-58).

With respect to claim 14, Howard et al. discloses wherein the purge stream is nitrogen and the hydrocarbon comprises diluent (col. 4, lines 43-52).

With respect to claim 16, Perry discloses wherein fresh purge gas feed (22) is connected to the extruder feed tank (5).

With respect to claim 18, Kreischer et al. discloses a vapor delivery conduit (114, 116, 128) connected to a top of the recycle tank (96) and a fractionating column (94).

With respect to claim 19, Kreischer et al. discloses a liquid delivery conduit (120) attached to a bottom of the recycle tank (96) and connected the polymerization reactor (col. 5, lines 46-48).

With respect to claims 20 and 23, though Kreischer et al. discloses sidedraws with the fractionation columns and a fractionation column between the recycle tank and the reactor, to eliminate an element and its function is an obvious expedient since the remaining elements can perform the same functions as before. In re Karlson, 136 USPQ 184 (CCPA 1963).

With respect to claim 22, Kreischer et al. discloses a second fractionation col. (16) connected to a top portion of the first fractionation column (94).

With respect to claim 24, Howard et al. does not teach wherein the recovery unit is connected to a purge gas flare.

11. Claims 28 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreischer et al. (6,045,661) and Howard et al. (5,533,437), and further in view of Lutz (4,284,837).

The modified system of Kreischer et al. discloses all that has been discussed above, including transferring hydrocarbon from the fractionation zone (94) to the reactor (col. 5, lines 45-47) but fails to disclose transferring a portion to a catalyst preparation zone.

Lutz teaches wherein the light fractions from a fractionation column of a polymerization system can be used as a solvent source in the preparation of catalyst (col. 2, lines 31-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Lutz to the modified system of Kreischer et al. in order to make efficient use of the products of the system which are already generated.

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kreischer et al. (6,045,661), Howard et al. (5,533,437) and Perry (3,869,807) and further in view of Lutz (4,284,837).

The modified system of Kreischer et al. discloses all that has been discussed above, including transferring hydrocarbon from the fractionation zone (94) to the reactor (col. 5, lines 45-47) but fails to disclose transferring a portion to a catalyst preparation zone.

Lutz teaches wherein the light fractions from a fractionation column of a polymerization system can be used as a solvent source in the preparation of catalyst (col. 2, lines 31-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Lutz to the modified system of Kreischer et al. in order to make efficient use of the products of the system which are already generated.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa A. Doroshenk

Examiner
Art Unit 1764